

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (canceled)

2. (currently amended) The method of claim 31 wherein power output from the starter motor is regulated to meet existing and impending power demands by drive system auxiliary devices.

3. (currently amended) A method for reducing exhaust emissions during cold start of an internal combustion engine, the engine being coupled to a starter motor and an exhaust gas treatment device, comprising:

providing assist to the engine by the starter motor to meet a demanded power when a temperature of the exhaust gas treatment system is less than an operating temperature of the exhaust gas treatment device; and The method of claim 1, further comprising:

operating the starter motor as a generator after the operating temperature of the exhaust gas treatment device has been reached.

4. (currently amended) The method of claim 61, further comprising: retarding spark timing of the engine.

5. The method of claim 61, further comprising: heating the exhaust gas treatment device by electric heater coupled to the exhaust gas treatment device.

6. (currently amended) A method for reducing exhaust emissions during cold start of an internal combustion engine, the engine being coupled to a starter motor and an exhaust gas treatment device, comprising:

providing assist to the engine by the starter motor to meet a demanded power when a temperature of the exhaust gas treatment system is less than an operating temperature of the exhaust gas treatment device; and The method of claim 1, further comprising delaying a shifting operation of an automatic transmission coupled to the internal combustion engine.

7. (canceled)

8. (currently amended) The method of claim 107, further comprising: retarding spark timing of the engine.

9. (currently amended) The method of claim 710, further comprising: heating the exhaust gas treatment device by electric heater coupled to the exhaust gas treatment device.

10. (currently amended) A method for reducing exhaust emissions during cold start of an internal combustion engine, the engine being coupled to a starter motor and an exhaust gas treatment device, comprising:

supplying fuel to the internal combustion engine when an engine rotational speed substantially exceeds idle speed; and

The method of claim 7, further comprising: delaying a shifting operation of an automatic transmission coupled to the internal combustion engine.

11. (cancel)

12. (currently amended) The system of claim 141 wherein said electronic control unit causes spark timing of the engine to be retarded.

13. (currently amended) The system of claim 141 wherein said electronic control unit causes an electric heater coupled to the exhaust gas treatment device to heating the exhaust gas treatment device.

14. (currently amended) An engine system comprising:

an internal combustion engine;

a starter motor coupled to said engine;

an exhaust gas treatment device arranged in an engine exhaust of said engine; and

a control unit electronically coupled to said engine and said starter motor, said control unit causing said starter motor to provide power to reduce a power provided said engine. The system of claim 11 wherein said electronic control unit delays a shifting operation of an automatic transmission coupled to the internal combustion engine.

15. (cancel)

16. (currently amended) The system of claim 185 wherein said electronic control unit causes spark timing of the engine to be retarded.

17. (currently amended) The system of claim 18~~5~~ wherein said electronic control unit causes an electric heater coupled to the exhaust gas treatment device to heating the exhaust gas treatment device.

18. (currently amended) An engine system comprising:  
an internal combustion engine;  
a starter motor coupled to said engine;  
an exhaust gas treatment device arranged in an engine exhaust of said engine;  
and  
a control unit electronically coupled to said engine and said starter motor, said control unit withholding supply of fuel to the internal combustion engine when an engine rotational speed is less than idle speed The system of claim 15 wherein said electronic control unit delays a shifting operation of an automatic transmission coupled to the internal combustion engine.

19. (new) The engine system of claim 18 wherein said starter motor is an integrated starter generator.

20. (new) The method of claim 10, further comprising: discontinuing operation of the starter motor when a temperature of the exhaust treatment device exceeds a predetermined temperature.

21. (new) The method of claim 20 wherein said predetermined temperature is at which the exhaust treatment device becomes active.

22. (new) The method of claim 10 wherein said starter motor is an integrated starter generator.

23. (new) The method of claim 22, further comprising: operating said integrated starter generator as a generator when a temperature of the exhaust treatment device exceeds a predetermined temperature.

24. (new) A method for reducing exhaust emissions during cold start of an internal combustion engine, the engine being coupled to a starter motor and an exhaust gas treatment device, comprising:

supplying rotational energy to the engine at rest by the starter motor;  
providing fuel to the engine when an engine rotational speed substantially exceeds an idle speed; and  
continuing to operate both the engine and the starter motor after fuel is provided to the engine.

25. (new) The method of claim 24 wherein said engine supplies a lesser amount of power than otherwise because of power supplied by the starter motor when both the engine and starter motor are operating.

26. (new) The method of claim 24 wherein said operating both the engine and the starter motor has both the engine and the starter motor applying a positive torque to a final drive coupled to the engine

27. (new) The method of claim 24, further comprising: discontinuing operation of the starter motor when a temperature of the exhaust treatment device exceeds a predetermined temperature.

28. (new) The method of claim 27 wherein said predetermined temperature is at which the exhaust treatment device becomes active.

29. (new) The method of claim 24 wherein said starter motor is an integrated starter generator.

30. (new) The method of claim 29, further comprising: operating said integrated starter generator as a generator when a temperature of the exhaust treatment device exceeds a predetermined temperature.

31. (new) The method of claim 27 wherein when the starter motor operation is discontinued, the starter motor provides substantially no positive or negative torque.